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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,206	03/16/2001	Javed Khan	P04803US0	8131

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MCKEE, VOORHEES & SEASE, P.L.C.
801 GRAND AVENUE
SUITE 3200
DES MOINES, IA 50309-2721

EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 06/18/2003

124

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,206

Applicant(s)

KHAN, JAVED

Examiner

Rick K. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/10/03 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-13 and 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure, as originally filed, failed to provide support for a step of "determining a standardized physical size for . . ." as a first step. Fig. 3 shows a step of "planarizing" as the first step, not the determining step as it is noted in the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riddel et al (US 3,574,930) in view of Rosen et al (US 6,099,164).

Riddel discloses selecting a desired or standardized physical size of the thermistor (Figs. show a thermistor assembly and col. 1, lines 26-36); selecting a mixture of metal film materials (col. 2, lines 54-64); depositing the mixture of metal film materials (14) on a substrate (10) using a thin film process (A printing process is a thin film process because each layer is thin and deposited independently of each other).

Riddle fails to disclose selecting a negative temperature coefficient of resistance versus temperature curve.

Resen discloses selecting a negative temperature coefficient of resistance versus temperature curve and associating the curve to the thermistor (Figs. 8-9) thereby properly selecting the resistive material respect to temperature for a desired thermistor.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Riddle by selecting a negative temperature coefficient of resistance versus temperature curve, as taught by Resen, for the purpose of properly selecting the resistive material respect to temperature for a desired thermistor.

Further, Riddle discloses the claimed invention except for selecting a second resistance versus temperature curve associated with a second type of negative temperature coefficient thermistor; selecting a second mixture of metal film materials; and depositing the materials on the second substrate. It would have been obvious to one ordinary skill in the art at the time the invention was made to selecting a second resistance versus temperature curve associated with a

second type of negative temperature coefficient thermistor; selecting a second mixture of metal film materials; and depositing the materials on the second substrate, since it has been held that mere duplication of the essential working parts of a thermistor to manufacture another thermistor involves only routine skill in the art.

6. Claims 11-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riddel et al (US 3,574,930)/Rosen et al (US 6,099,164) in view of Kimura et al (US 6,314,637), and further in view of Bunshah et al (Deposition Technologies for Films and Coatings) and Plough, Jr. et al (US 4,498,071).

Riddel/Rosen disclose planarizing a substrate (layer 12); depositing conductor terminals (13 and 15); and heat treating.

Riddel/Rosen fail to disclose sputtering to deposit conductor terminals; sputtering a passivation layer; and sputtering silicon nitride film and thermistor.

Kimura discloses depositing a passivation layer (4) thereby protecting the metal film material from the environment.

Plough discloses depositing silicon nitride film (14A) thereby providing a good surface for the resistive material to adhere.

Bunshah discloses sputtering is used to deposit material on a substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Riddel/Rosen by sputtering to deposit conductor terminals; sputtering a passivation layer; and sputtering silicon nitride film and thermistor, as taught by Kimura, Plough and Bunshah, for the purpose of protecting the metal film material from the environment; providing a good surface for the resistive material to adhere; and deposit material on a substrate.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Riddel et al (US 3,574,930) in view of Bunshah et al (Deposition Technologies for Films and Coatings).

Riddle discloses depositing the mixture of metal film materials (14) on a substrate (10).

Riddle fails to disclose sputtering.

Bunshah discloses sputtering is used to deposit thin film materials on a substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Riddel by sputtering to deposit the mixture of metal film materials on a substrate, as taught by Bunshah, for the purpose of depositing thin film materials on a substrate.

Response to Arguments

8. Applicant's arguments filed October 18, 2002 have been fully considered but they are not persuasive.

The support for the determining step is not found as the applicant purported.

Conclusion

9. **Please provide reference numerals to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (703) 308-4784. The

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examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Friday, except for maxi-flex day off (any one of working days).

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

A handwritten signature in black ink, appearing to read 'Richard Chang', is written over a horizontal line.

**RICHARD CHANG
PRIMARY EXAMINER**

RC
June 17, 2003